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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/522,407	03/09/2000	Toshihiro Shima	Q58164	4033

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EXAMINER

POON, KING Y

ART UNIT	PAPER NUMBER
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2624

DATE MAILED: 03/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/522,407	Applicant(s) SHIMA, TOSHIHIRO	
	Examiner King Y. Poon	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 October 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 March 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 10, 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 10: It is unclear how the CPU processes writing process at the same time processing generation process while the priority of the writing process and the priority of the generating process to be processed by the CPU are reversed every predetermined time interval.

Regarding claim 11: Claim 11 is claiming writing print data into a memory, reading the written print data out of the memory to generate a request for printing. From the claim, the writing process must be precedently executed before the request for printing can be generated. It unclear how is it possible (from reading the claim language) to precedently executed the writing process after the print request is generated.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-4, 6, 7, 12, 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Shima et al (EP 0782067 A2).

Regarding claim 1: Shima teaches a printer (column 6, line 39) provided with an auxiliary storage (column 15, line 1), comprising: a printing task (column 6, lines 57-59, column 7, lines 30-35, column 14, line 24) for executing processing related to the control of a print engine (column 6, line 48) according to a request for printing (converting intermediate print information into bitmap, column 16, lines 5-15, column 6, lines 54-57); an image generation task (task for converting intermediate print information into bitmap, column 16, lines 5-15, column 6, lines 54-57, column 14, lines 45-50) for generating said request for printing based upon print data sent from an external device (host, column 6, lines 39-46), a task for writing to the auxiliary storage (column 14, lines 15-18, column 15, lines 45-46) by which data related to printing (intermediate print data) is stored in said auxiliary storage, and a task for reading from the auxiliary storage (inherently, the intermediate print data must read out by the management task before the management task can convert the intermediate print data into bitmap, column 14, lines 45-50, column 16, lines 5-15), by which said data stored in said auxiliary storage is read, wherein each of said tasks are exclusively selected (executed alternately; i.e., processing different tasks at different time, column 14, lines 25-30) and executed according to each priority (column 14, lines 25-30 priority, by definition, is something deserving prior attention or preceding earlier in time) wherein a

relative order of priority based upon the priority of said task for writing to said auxiliary storage and the priority of said image generation task is varied (the priority must be varied, according to the definition of priority in order for the task to be processed; for example if task A must always (in all time) deserving prior attention or preceding earlier in time to be processed compare to task B, task B will never be processed) when a predetermined event occurs (when several –msec ends, column 14, lines 25-30).

Regarding claim 2: Shima teaches wherein priorities lower than the priority of said printing task (as discussed before, printing task must has the highest priority before printing task can be processed) is applied to said task for writing to said auxiliary storage and said task for reading from said auxiliary storage.

Regarding claim 3: Shima teaches wherein said predetermined event is a predetermined elapse of time (column 14, lines 25-30).

Regarding claim 4: Shima teaches wherein said predetermined event is an occurrence of a predetermined situation which occurs in a processing of any of tasks (see discussion of claim 1).

Regarding claim 6: Shima teaches wherein a priority lower than the priority of said task for reading from said auxiliary storage is applied to said task for writing to said auxiliary storage (in the situation that the CPU is in the cycle of reading form the auxiliary).

Regarding claim 7: Shima teaches a printer comprising: an auxiliary storage (column 15, lines 45-47) for storing data related to printing; a print engine (column 6, line 48) for executing printing; and a controller (column 6, lines 50-53) comprising:

writing means (the program of the controller that writes, column 15, lines 5-10) for storing said data in said auxiliary storage; reading means (the program of the controller that writes, column 15, lines 5-10) for reading said data stored in said auxiliary storage, image generation means (program for converting intermediate print information into bitmap, column 16, lines 5-15, column 6, lines 54-57, column 14, lines 45-50) for generating a request for printing supplied to said print engine, and printing execution means (program that controls print engine, column 6, lines 55-59) for controlling said print engine, wherein, if a predetermined event occurs during processing for generating said printing request by said image generation means, said writing means is executed more precedent than a generation of said request for printing by said image generation means (see priority discussion of claim 1, and claim 2).

Regarding claim 12: Shima teaches a program (column 6, lines 50-55) for controlling the printer discussed in claims 1, 2; inherently all program are stored in a recording medium.

Note: the time the printing task is being executed is when the printing task is most precedently executed according to priority.

Regarding claim 13: Shima teaches a program (column 6, lines 50-55) for controlling the printer discussed in claim 1; inherently all program are stored in a recording medium.

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5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shima et al.

Regarding claim 8: Shima wherein said data related to printing is stored in storage 44 includes print data (print information sent from host, column 6, lines 40-45, column 8, lines 10-20) sent from an external device (host, column 6, lines 40-45).

Shima does not teach to use auxiliary memory for storing print data sent from the host.

However, Shima teaches, to the controller that controls printing, the auxiliary memory 45 and memory 44 are one memory; i.e., the controller treat the two memory as one single memory.

Moreover, Shima further teaches information saved in the RAM 44 can also be saved in the auxiliary memory (column 17, lines 25-30); therefore, Shima indirectly teaches storing print data received from the host.

Therefore, it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Shima to use auxiliary memory for storing print data sent from the host.

The reason for doing so would have prevented that main memory 44 from running out of memory space and to bring out the true purpose of the auxiliary memory - assisting the main memory.

Regarding claim 9: Shima teaches wherein said data related to printing stored in memory storage 44 or auxiliary memory 45 (fig. 3) includes at least a part of said request for printing (column 17, lines 7-30, fig. 13).

Shima does not specifically teach to use the auxiliary memory for storing at least a part of said request for printing.

However, Shima teaches, to the controller that controls printing, the auxiliary memory 45 and memory 44 are one memory; i.e., the controller treat the two memory as one single memory.

Moreover, Shima further teaches information saved in the RAM 44 can also be saved in the auxiliary memory (column 17, lines 25-30); therefore, Shima indirectly teaches storing print data received from the host.

Therefore, it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Shima to use the auxiliary memory for storing at least a part of said request for printing.

The reason for doing so would have prevented that main memory 44 from running out of memory space and to bring out the true purpose of the auxiliary memory - assisting the main memory.

Regarding claim 10: Shima teaches a printer control method, comprising: a writing process (column 15, lines 5-10) for storing print data (column 8, line 10) as it is

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received from an external device (host, column 8, line 10) in a storage (RAM 44, column 8, lines 5-20), a reading process (column 15, lines 5-10) for reading print data written to said auxiliary storage, a generation process (column 16, lines 5-15) for generating a request for printing based upon said read print data; and a printing process (column 16, lines 35-37) for printing based upon said request for printing, wherein a priority (column 14, lines 25-30) priority, by definition, is something deserving prior attention or preceding earlier in time) of the writing process and a priority of the generation process are reversed every predetermined time interval (alternately, column 14, lines 25-30) and said writing process is controlled so that it is periodically executed (column 14, lines 25-30) by CPU (column 3, lines 50-55) while said generation process is executed by said CPU (the priority must be varied/reversed, according to the definition of priority in order for the task to be processed; for example if task A must always (in all time) deserving prior attention or preceding earlier in time to be processed compare to task B, task B will never be processed)

Shima does not teach to use auxiliary memory for storing print data sent from the host.

However, Shima teaches, to the controller that controls printing, the auxiliary memory 45 and memory 44 are one memory; i.e., the controller treat the two memory as one single memory.

Moreover, Shima further teaches information saved in the RAM 44 can also be saved in the auxiliary memory (column 17, lines 25-30); therefore, Shima indirectly teaches storing print data received from the host.

Therefore, it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Shima to use auxiliary memory for storing print data sent from the host.

The reason for doing so would have prevented that main memory 44 from running out of memory space and to bring out the true purpose of the auxiliary memory - assisting the main memory.

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shima et al as applied to claims 1, 4 above, and further in view of Zimmerman (US 5,490,237).

Regarding claim 5: Shima teaches does not teach wherein said predetermined event is judgment that quantity of requests for printing generated by said image generation task and stored to be consumed by said printing task exceeds predetermined quantity.

Zimmerman, in the same area of generating print request to be consumed by a print engine, teaches to start printing when the print request (data buffered in the memory, column 5, lines 25-40) stored to be consumed by the print engine exceeds predetermined quantity.

Therefore, it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Shima to include: the predetermined event, that will trigger a printing priority task by the print engine, is judgment that quantity of requests for printing generated by said image generation task and stored to be consumed by said printing task exceeds predetermined quantity.

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It would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Shima by the teaching of Zimmerman because it would have create a low cost printer that would prevent a print overrun that would cause the page "not printable." (Zimmerman, column 2, lines 1-55, column 2, lines 20-25)

Response to Arguments

8. Applicant's arguments, see page 7, argument about Shima 032, filed 10/7/2004, with respect to the rejection(s) of claim(s) 1 under USC 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Shima et al (EP 0782067).

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to King Y. Poon whose telephone number is (571) 272-7440.



**KING Y. POON
PRIMARY EXAMINER**

3/25/05